Response Under 37 CFR 1.116

**Expedited Procedure** 

Examining Group 1775

Appl. No. 10/069,625

Amdt. dated February 10, 2004

Reply to Office Action of December 10, 2003

Attorney Docket No. 1217-012195

**REMARKS** 

Claims 1-3 and 5-45 are currently pending in this application. Claims 1-3, 12-14,

16, 18-21, 30-32, 34, 35, 39-41, and 45 have been amended to indicate that the stainless steel

coating layer is "white-colored." The Amendment is supported in the original claims, and at for

instance Example 6 (page 49, lines 13-14) "a stainless steel coating layer of a white color tone

was formed" and Example 7 (page 52, lines 4-5) "a white-colored stainless steel coating layer

was formed." The phrase "a part of" has been removed from claim 16.

35 U.S.C. § 112 Rejections

The Examiner rejected claims 1-3 and 5-45 under 35 U.S.C. § 112, first

paragraph, asserting that there is no support for removing the term "white-colored" from the

claims. The term was removed from the claims as an attempt to overcome the Examiner's

rejection of the claims under 35 U.S.C. § 112, second paragraph as being indefinite because it

was unclear what "white colored" would mean. Applicants have added the term "white-colored"

to the respective claims as originally used.

In a telephone interview on December 18, 2003 with Applicants' representative,

Gary F. Matz, the Examiner indicated that the term "white-colored" should be re-inserted into

the respective claims, and that Applicants should indicate what is meant by "white-colored"

either 1) as supported in the specification, and/or 2) by submitting evidence that would indicate

that one of ordinary skill in the art would understand what the term means.

As described in the "BACKGROUND ART" section of the specification, an

outermost layer, which is white in color, can be made using a palladium plating layer, a

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palladium alloy plating layer, or a rhodium plating layer formed on a nickel layer by wet plating.

However, using such noble metals in the outermost plating layers often results in unacceptably

high cost.

A personal ornament having the characteristic white color of the stainless steel

has not yet been produced at a low cost (see page 2, lines 21-23).

Accordingly, there is a demand for a low-priced personal ornament having an

inexpensive white-colored stainless steel coating layer (see page 23, line 24-page 3, line 1).

Additionally, the phrase "a stainless steel coating layer of a white color tone was

formed" is used in Example 6 (page 49, lines 13-14) and Example 7 (page 52, lines 4-5), while

the phrase "a white-colored stainless steel coating layer was formed" is used in other Examples.

The stainless steels used in the Examples are SUS 304, SUS444 and SUS310S.

Thus, both "white-colored stainless steel" and "a characteristic white color of the

stainless steel" are used in the present invention as a term having the same meaning, i.e., white

color refers to the appearance of stainless steel.

Regarding extrinsic evidence regarding what one skilled in the art would have

used to understand what "white-colored" means, Applicants submit herewith JP 60-10010, JP

55-141538 and JP 57-097484, along with an English language translation of the particularly

relevant portions of each. In these publications, the term "whitish color tone" (JP 60-10010) and

the term "white color" (JP 55-141538 and JP 57-097484) were used to convey the same meaning.

The term "white-colored" is a standard term of art used to describe the appearance of a metal

surface.

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These publications indicate that one of ordinary skill in the art would recognize

and would commonly use the term "white color" or "whitish color tone," as well as "white-

colored," as terms for describing the surface appearance of stainless steel (as a coating layer

applied by plating).

As a further example, Webster's Ninth Collegiate Dictionary, Merriam-Webster

(1987) includes the following definition of terms (copies of the relevant pages enclosed

herewith).

White Metal: 1: any of several light-colored alloys used esp. as a base for plated

silverware and ornaments and novelties.

White Gold: a pale alloy of gold esp. with nickel or palladium that resembles

platinum in appearance.

White: 1 a: free from color ... d: lustrous pale gray: silvery: also: made

of silver.

Platinum: 1: a heavy precious grayish white noncorroding ductile malleable

metallic element that fuses with difficulty and is used esp. in chemical ware and apparatus, as a catalyst, and in dental and

jewelry alloys. 2: a moderate gray.

From the descriptions in the specification, prior art available at the time, and

readily available dictionary definitions, "white-colored" as used in the specification would

indicate a lustrous gray appearance in the stainless steel coating layer, as one skilled in the art

would readily understand.

If the Examiner would find it helpful, Applicants are prepared to submit

specimens that visually demonstrate what "white-colored" or "white color tone" means as used

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in the invention. However, Applicants hope that the textual submissions described above are sufficient and that the meaning of the term "white-colored" is now readily discernable.

The Examiner also indicates that the phrase "a part of" in claim 16 is unclear. Applicants have removed this phrase from the claim.

Applicants assert that all of the rejections under 35 U.S.C. § 112 have been addressed and that the claims are in form for allowance.

# **CONCLUSION**

As all outstanding issues regarding the pending claims have been addressed, the claims are in form for allowance and the rejections under 35 U.S.C. § 112 should be withdrawn.

In view of the above amendments and remarks, reconsideration of the rejections and allowance of claims 1-3 and 5-45 are respectfully requested.

Respectfully submitted,

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# STIR'S



# Ninth New Collegiate Dictionary

a Merriam-Webster

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reds :

thinks we will be a lister and the Abbreviation

white line n (15c): a band or edge of something white; esp: a stripe painted on a road and used to guide traffic white list \-\list\-\list\ n (ca. 1909): a list of approved or favored items—compare BLACKLIST—white-listed \-\list\-\list\-d\rangle adj [fr. the former belief that the choleric temperament depends on the body's producing large quantities of yellow bile] (ca. 1548): PUSILIANIMOUS\_LILY\_LIVERED white-ly \hat\-\lint\-

white-ly \\hat\text{hwit-\lambda}' \wit-\adv'(14c): with an effect of whiteness: so as to show or appear white white man's burden \('\text{The White Man's Burden''}\) (1899), poem by Rudyard Kipling] (1899): the alleged duty of the white peoples to manage the affairs of the less developed non-white peoples white matter n (1839): neural tissue that consists largely of myelinated nerve fibers, has a whitish color, and underlies the gray matter of the brain and spinal cord or is gathered into nerves white metal n (1613) 1: any of several light-colored alloys used esp. as a base for plated silverware and ornaments and novelties 2: any of several lead-base or tin-base alloys (as babbitt metal) used esp. for bearings, fusible plugs, and type metal white mustard n (1731): a Eurasian mistard (Brassica hirta) grown for its seeds which yield mustard and mustard oil whiten \('\hat\text{hwit-n'n, 'wit-\ vb whitened; whitening \'\hat\text{hwit-nin, 'wit-\ -2n-in\) vi (14c): to make white or whiter (snow \( -e \) the hills) \( \times vi : to become white or whiter

in) w (14c): to make white or whiter (snow ~ea the niis) ~ w; to become white or whiter whitener \him \n (1611): one that whitens; specif: an agent (as a bleach) used to impart whiteness to something whiteness \him \him \n (bef. 12c) 1: the quality or state of being white: as a: white color b: PALLOR PALENESS c: freedom from stain: CLEANNESS 2: white substance whitening n (1601) 1: the act or process of making or becoming white 2: something that is used to make white: whiting white oak n (1635): any of various oaks (esp. Quercus alba of No. America) with acorns that mature in one year and leaf veins that never extend beyond the margin of the leaf; also: its hard strong durable wood

wood white of egg n, pl whites of egg or whites of eggs (15c): white 2a(1) white oil n (ca. 1900): any of various colorless odorless tasteless mineral oils used esp. in medicine and in pharmaceutical and cosmetic preparations white-out 'hwit-aut, 'wit-\ n [white + -out (as in blackout)] (1942): a surface weather condition in a snow-covered area (as a polar region) in which no object casts a shadow, the horizon cannot be seen, and only dark objects are discernible; also: a blizzard that severely reduces visibility

visibility white paper n (1899) 1: a government report on any subject; esp: a British publication that is usu. less extensive than a blue book 2: a detailed or authoritative report white pepper n (140): a pungent condiment that consists of the fruit of an East Indian plant (Piper nigrum) ground after the black husk has risibility

an East Indian plant (Piper nigrum) ground after the black rusk rusk been removed white perch n (1775) 1: a small silvery anadromous sea bass (Morone americana) of the coast and coastal streams of the eastern U.S. 2: FRESHWATER DRUM 3: WHITE CRAPPIE white pine n (1682) 1 a: a tall-growing pine (Pinus strobus) of eastern No. America with leaves in clusters of five — called also eastern white pine b: any of several trees that resemble the white pine esp. in having leaves in bundles of five 2: the wood of a white pine and esp. of the eastern white pine

No. America with leaves in clusters of tive — calieu also existed white pine b: any of several trees that resemble the white pine esp. in having leaves in bundles of five. 2: the wood of a white pine and esp. of the eastern white pine white-pine blister rust n (1916): a destructive disease of white pine caused by a rust fungus (Cronartium ribicola), that passes part of its complex life cycle on currant or gooseberry bushes; also: this fungus white potato n (ca. 1890): POTATO 2b white room n (1962): CLEAN ROOM.

White Russian n (1866): BELORUSSIAN white rust n (ca. 1884): any of various plant diseases caused by phycomycetous fungi (genus Albugo of the order Peronosporales) and characterized by the presence of missess of white spores that escape through ruptures of the host tissue; also: a fungus causing a white rust white sale n (1923): a sale of white goods white souce n (1723): a sauce consisting essentially of a roux with milk, cream, or stock and seasoning white sea bass n (1884): a large croaker (Cronoscon nobilis) of the Pacific coast that is an important sport and food fish white shark n (ca. 1674): a large mackerel shark (Carcharodon carcharias) of warm seas that is bluish when young but becomes whitish with age and is a man-eater — called also great white shark — see SHARK illustration white slaver n (1857): a woman or girl held unwillingly for purposes of commercial prostitution (1912): one engaged in white-slave traffic white slaver n (1857): enforced prostitution white shaver \ 1(1857): enforced prostitution white shaver \ 1(1857): enforced prostitution white shaver n (1857): enforced prostitution white spruce (Picea glauca) of cooler parts of No. America that has short blue-green leaves and slender cone 2: the wood of a white spruce (Picea glauca) used esp. for construction and as a source of paper pulp

of paper pulp of paper pulp white sucker n (ca. 1902): a common and widespread edible sucker (Caiostomus commersoni) of the U.S. and Canada white supremacist n (1945): an advocate of or believer in white suprem-

white supremacy n (1867): a doctrine based on a belief in the inherent superiority of the white race over the black race and the correlative necessity for the subordination of blacks to whites in all relationships white-tail \hwit-tāl, \wit-\n (1872): white-tailed deer \hwit-tāl, \wit-\n (1874) = n No. American deer (Odocoileus virginianus) with a rather long tail white on the undersurface and forward-arching antlers — see DEER illustration white-throat \hwit-\thin\tilde{th}-\

with rusty upper surfaces and largely pale buff underparts b: will THROATED SPARROW white-throated sparrow \hwit-, throat-od-, wit-\ n (1811): a common brown sparrow (Zonatrichia albicollis) of eastern No. America will striped crown and a large white patch on the throat white-tie adj (1953): characterized by or requiring the wearing of the warms of the striped crown are supported by or requiring the wearing of the striped crown are supported by or requiring the wearing of the warms of the striped crown as a support of the striped crown as a sup

white walnut n (ca. 1743) 1: BUTTERNUT Ib 2: the light-color

white walnut n (ca. 1743) 1: BUTTERNUT 1b 2: the light-colored wood of a butternut white-wash \(^1\) wit, wish, \(^1\) wit, \(^1\) wish\(^1\) wite-wash \(^2\) white-wash \(^2\) a: to gloss over or cover up (as vices or crimes) is a concrate by means of a perfunctory investigation or through biased presentation of data 3: to hold (an opponent) scoreless in a game or contest — white-wash er n

whitewash n (1689) 1: a liquid composition for whitening a surface as a: a preparation for whitening the skin b: a composition (aspoil lime and water or whiting, size, and water) for whitening structures surfaces 2: an act or instance of glossing over or of exonerating size; a defeat in a contest in which the loser fails to score white-wash-ing \(^1\) n (1663): an act or instance of applying white water n (1586): Frothy water (as in breakers, rapids, or falls) white water n (1586): Frothy water (as in breakers, rapids, or falls) white water n (1586): Frothy water (as in breakers, rapids, or falls) white water n (1586): If only water (as in breakers, rapids, or falls) white water n (1286): If only water (as in breakers, rapids, or falls) white water n (1286): a cetacean (Delphinapterus leucas) that about 10 feet (3.0 meters) long and white when adult — called about 10 feet (3.0 meters) long and white when adult — called about 10 feet (3.0 meters) long and white when adult — called about 10 feet (3.0 meters) long and white when adult — called about 10 feet (3.0 meters) long and white when adult — called about 10 feet (3.0 meters) long and white when adult — called about 10 feet (3.0 meters) long and white when adult — called about 10 feet (3.0 meters) long and white when adult — called about 10 feet (3.0 meters) long and white when adult — called about 10 feet (3.0 meters) long and white when adult — called about 10 feet (3.0 meters) long and white when adult — called about 10 feet (3.0 meters) long and white when adult — called about 10 feet (3.0 meters) long and white when adult — called about 10 feet (3.0 meters) long and wood of a butternut

beliga
white wine n (14c): a wine ranging in color from faintly yellow to
ber that is produced from the juice alone of dark- or light-col

or which place whiting hwitin, with [ME, fr. MD witine, fr. wit white; aking hwiting hwitin, with any of various marine food fishes: as a :according European fish (Merlangus merlangus) related to the cod

HAKE

"whiting n [ME, fr. gerund of whiten to white] (15c): calcium ca

prepared as fine powder by grinding and washing and used in

pigment and extender, in putty, and in rubber compounding an

whiting n [ME, ir. gerund of whiten to white] (150): calcium emprepared as fine powder by grinding and washing and used espipigment and extender, in putty, and in rubber compounding and pipigment and extender, in putty, and in rubber compounding and pipigment and extender, in putty, and in rubber compounding and pipigment and extender, in putty, and in rubber compounding and pipigment and extender, in putty, and in rubber compounding and pipigment and extender whiting and in the first the end or around the nail — called also felan Whitsmonday (huit, iman-de, wit, iman-\text{\

sound 2: a movement or passage of something account whizzing sound

whizz n, pl whizzes [prob. by shortening & alter.] (1917)

whiz-bang also whizz-bang \hat\text{hwiz-ban}, \hat\text{wiz-, -ban}, \hat\text{n} (can that is conspicuous for noise, speed, excellence, or starting whiz-bang adj

whiz kid also whizz kid n [¹whiz] (ca. 1942) wintelligent, clever, or successful esp, at an each whizzer \( \text{invector} \), \( \text{

note cloth in (1040). Part in Million cloth Million cloth bile gale in (ca. 1805): wind having a speed 3 see BEAUFORT SCALE table old bearted \hat\text{holichearted \hat\text{holichea

inchent ed \holi-hart-od\ adj (1840) 1: stock determined, or enthusiastic (a \sigma si hart-od\ adj (1840) 1: stock determined, or enthusiastic (a \sigma si harked by complete earnest commitmen estation (gave the movement his \sigma supprisole-hart-ed-ly adv ble-hog adj (1829): committed without n (a \sigma patriot) hole hog a (1829): the whole way or farth fibially in the phrase go the whole hog ble-hog adv (1844): to the fullest extromplet hole note n (1597): a musical note equal in oles or two half notes or two half notes ble-rest n (ca. 1890): a musical rest correstible note.

whe number n (1557): INTEGER billiers in (ca. 1890): a musical rest correstile rest n (ca. 1890): a musical rest correstile note hole-sale (hole-sale) in (15c): the sale of constrease (as by a retail merchant) holesale ad (1642) 1: performed or existibility discrimination ( $\sim$  slaughter) 2: of the sale of commodities in quantity for resale holesale ad v (1759): in a whole-sale manner holesale ad v (1759): in a whole-sale n v (1851): a merch light in the sale n v (1857): a merch light in the sale n v (1

: one that continuously which is circling course (as of events) of numerous beetles (family Gymes e of water where they move swilling

-\ n (1529) 1 a: a confused ignetic or impelling force by whing to be drawn into this. ~ of irr moving rapidly in a circle-so at into which floating objects may.

r moving faporation objects may into which floating objects may ob BATH apeutic bath in which all or partling currents of hot water small rotating windstorm of limit of the lower of the water of the w

a whirlwind esp. in speed or forg marked by or exhibiting a whir

small whirlwind

b whir-ried; whir-ry-ing [perh. b] 2): to convey quickly ~ vi.

1518): to urge on or cause to mosibilant sound 2: to move will tor... ~es down to the lower let.

d: swish iefly Irish (15c): HUSH — often

prob. of Scand origin; akin to ait, L virga branch, rod] (14c) motion 2 a : a small usud by hand b : a flexible bunc od by hand b: a flexible bunch of to a handle for use as a brushio and quickly ~ w 1: to move off to bed) 2: to mix or fluff up egg whites) 3: to brush on the brush of the bed of the brush of the brus

om with a short handle used es

cormation fr. whiskers (mustache); beard b pl (1) archaic: MUSTACHE go on the sides of the face or on interest as a constant of the sides of the face by a cone of the long near the mouth of an animal saiding on each side of the bowsprid usur, used in pl. 4 a: a shreding the side of the bowsprid strength used est. O reserved to the side of t echanical strength used esp. to re 1 — whis kered \-kərd\ adj — wh

\ n. pl whiskeys or whiskies [Ir tha, lit., water of life] (1715) /1 1 mash of grain (as rye, corn, or

ations code word for the letter will ail usu. consisting of whiskey, sug

i-pered; whis-per-ing \-p(2-)rin\ | Mi to OHG hwispalön to whisper-ind 12c) 1: to speak softly with his esp. to avoid being overheard 2-mi else whispering ~ v 1: to address unicate in or as if in a whisper-ind ommunicated by or as if by whisper 2 a: an act or instance of whisper n of the vocal cords b: a sibilar sech 3: HINT.TRACE that whispers: specif: RUMORMOR

e that whispers; specif : RUMORN whispered speech b: Gossip, Rumb

ng a sibilant sound 2: spre

reports (~ tongues can poison) in ly \-p(>-)rin-le\ adv
): the systematic dissemination nors or charges esp. against a card

(1834) 1: resembling a whispell

il Brit (14c): to be silent : HUSH

prob. fr. 2whisk; fr. whisking up our players in two partnerships in d that scores one point for each

ttrib IME, fr. OE hwistle; akin itrib [ME, fr. OE hwistle; akin ion—more at whine] (bef. 12c) 1.00 and is produced by the forcible is short tube (police ~> b : a ded into a cavity or against a thin ory ~> 2 a : a shrill clear; or air in through the puckered lipt the c; a signal given by or as a bles a whistle; esp: a shrill clear.

(a-)lin\ vi (bef. 12c) 1 a toul drawing air through the puckered

billio utter a shrill note or call resembling a whistle c: to make a shrill clear sound esp. by rapid movement (the wind whistled) d: to blow or sound a whistle 2 a: to give a signal or issue an order or simmons by or as if by whistling (\sigma to a dog) b: to make a demand whistle result (did a sloppy job so he can \sigma for his money) \sigma v v: 1 for soid, bring, signal, or call by or as if by whistling 2: to produce; for express by whistling (\sigma a tune) — whistle-able \\--l-b-b\\ adj \\ adj whistle in the dark: to keep up one's courage by or as if by whistle-ball \(\frac{1}{2}\) course.

whistle in the dark: to keep up once who reveals something colight blower \\_blo(-a)r\ n (1970): one who reveals something colight blower \\_blo(-a)r\ n (1970): one who reveals something colight blower \\_blo(-a)r\ n (1970): one that whistles: as a
light blower \\_blo(-a)r\ n (1970): one that whistles: as a
light and Polynesian birds that are related to the shrikes and have a
light gall b : a large mountain marmot (Marmota caligata) of
light blowestern No. America c: a broken-winded horse d: an eleclight blower can be a large mountain marmot (Marmota caligata) of
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an inhwestern No. America c: a broken-winded horse d: an electromagnetic signal of audio or radio frequency that is generated by lighting discharge and that travels along the earth's magnetic lines of lighting discharge and that travels along the earth's magnetic lines of lighting discharge and that travels along the earth's magnetic lines of lighting discharge and that travels along the earth's magnetic lines of given in the lighting discharge and that travels along the earth's magnetic lines of lighting discharge and lighting discharge and lighting discharge and lighting and lighti

reactionary political group vi.white, adj.] archaic (bef. 12c)

(HITEN L'amur) n [amur, fr. Amur river] (1968): GRASS CARP [Fant n (ca. 1684): TERMITE [Fant n (ca. 1684): TERMITE

SOR!)
beard \'hwit-,bi(o)rd, 'wit-\ n (15c): an old man: GRAYBEARD
blood cell n (ca. 1890): a blood cell that does not contain hemoin;:LEUKOCYTE— called also white blood corpuscle
book n (15c): an official report of government affairs bound in

cap \'hwit-kap, 'wit-\ n (1773): a wave crest breaking into white

lectar n (1675): any of several No. American timber trees: as a strong-scented evergreen swamp tree (Chamaecyparis (hyoides) of several no. American timber trees: as a strong-scented evergreen swamp tree (Chamaecyparis (hyoides) of several no. American timber trees: as a strong-scented evergreen swamp tree (Chamaecyparis (hyoides) of several no. American timber trees: as a strong-scented sept of Canada and the northern U.S. several no. American timber to the northern trees. The several northern trees are the northern trees and the several northern trees. The several northern trees are the northern trees and the several northern trees. The northern trees are the northern trees and the several northern trees. The several northern trees are the northern trees and the several northern trees. The northern trees are the northern trees and the northern trees are the northern trees. The northern trees are the northern trees are the northern trees. The northern trees are the northern trees and the northern trees are the northern trees. The northern trees are the northern trees are trees are the northern trees. The northern trees are trees. The northern trees are tree

white corpuscle n (ca. 1860): WHITE BLOOD CELL
white crappie n (ca. 1926): a silvery No. American sunfish (Pomoxis
annularis) with 5 or 6 protruding spines on the dorsal fins that is used
as a panfish and often for stocking small ponds
whited \hwit-ad, \wit-\adj (14c) 1: covered with white or whiting
and esp. with whitewash 2: made white: WHITENED
whited sepulcher n [fr. the simile in Mt 23:27 (AV)] (1582): a person
inwardly corrupt or wicked but outwardly or professedly virtuous or
holy: HYPOCRITE
white dwarf n (ca. 1926): a whitish star of low intrinsic brightness usu,
with a mass approximately equal to that of the sun but with a density
many times larger

with a mass approximately equal to that of the sun but with a density many times larger white elephant n (15c) 1: an Indian elephant of a pale color that is sometimes venerated in India, Sri Lanka, Thailand, and Burma 2 a : a property requiring much care and expense and yielding little profit b: an object no longer of value to its owner but of value to others c: something of little or no value white-face \highlightarrow mitching of little or no value white-face \highlightarrow mitching and its little profit : HEREFORD 2: dead-white facial makeup (a clown in ~) white-faced \highlightarrow mitching and (1595) 1: having a wan pale face 2: having the face white in whole or in part — used esp. of an animal otherwise dark in color white feather n [fr. the superstition that a white feather in the plumage

dark in color white feather n [fr. the superstition that a white feather in the plumage of a gamecock is a mark of a poor fighter] (ca. 1785): a mark or symbol of cowardice — used chiefly in the phrase show the white feather white-fish 'hwit-, fish, 'wit-\ n (15c) 1 a: any of various freshwater food fishes (esp. of genera Coregonus and Prosopium) related to the salmons and trouts b: any of various fishes in some respect resembling the true whitefishes c Brit: any of various market fishes with white flesh that is not oily 2: the flesh of a whitefish esp. as an article of food

white flag n (1600) 1: a flag of plain white used as a flag of truce or as a token of surrender 2: a token of weakness or yielding white flight n (1975): the departure of white families usu. from urban

white flight n (1975): the departure of white families usu. from urban neighborhoods undergoing racial integration or from cities implementing school desegregation white-fly \(\frac{1}{2}\) \text{wit-} \ n \((\text{(ca. 1890)}\): any of numerous small homopterous insects (family Aleyrodidae) that are injurious plant pests related to the scale insects white-foot-ed mouse \hwit-fout-od-, \(\text{wit-}\) \ n (1869): a common woodland mouse \((\text{(Peromyscus leucopus)}\) of the eastern U.S.; \(\text{also}\): any of several related mice

lated mice white friar n. often cap W&F [fr. his white habit] (15c): CARMELITE white-fringed beetle \hwit-frinj(d)-, \hwit-fringed beetle \hwit-frinj(d)-, \hwit-fringed heetle \hwit-frinj(d)-, \hwit-fringed heetle \hwite-fringed heetle \hwite-fringed heetle \hwite-fringed heetle \hwite-fringed heetle \hwite-fringed heetle \hwite-fringed heetle heetle

also white gas
white gold n (ca. 1666): a pale alloy of gold esp. with nickel or palla-

also white gas white gold n (ca. 1666): a pale alloy of gold esp. with nickel or palladium that resembles platinum in appearance white goods n pl (ca. 1871) 1 a: white fabrics esp. of cotton or linem b: articles (as sheets, towels, or curtains) orig, or typically made of white cloth 2: major household appliances (as stoves and refrigerators) that are typically finished in white enamel white grub n (1817): a grub that is the larva of a june beetle and a destructive pest of grass roots

White-hall \hwite-hol, 'whit\n [Whitehall, thoroughfare of London in which are located the chief offices of British government] (1850): the British government (ca. 1931): MILIUM white-head \holdsymbol hed \n (ca. 1931): MILIUM white-headed \holdsymbol hed \n (ca. 1931): sillium white-headed \holdsymbol hed \n (ca. 1710) 1: a temperature (as for copper and iron from 1500' to 1600' C) which is higher than red heat and at which a body becomies brightly incandescent 2: a state of intense mental or physical strain, emotion, or activity white hole n (1971): a hypothetical extremely dense celestial object that radiates enormous amounts of energy and matter — compare BLACK Hole

HOLE white hope n (ca. 1910) 1 slang: a white contender for a boxing championship held by a black; also: one who is felt to represent whites 2: one from whom much is expected; esp: a person undertaking a difficult task. White Horde n (ca. 1911): a Mongolian people powerful in Russia in the 14th content.

White Horde n (ca. 1911): a Mongolian people powerful in Russia in the 14th century white-hot \hat\text{hit}, \text{wit}\adj (1820) 1: being at or radiating white heat 2: ardently zealous: FERVID White House \hat\text{hais}\ n [the White House, mansion in Washington, D.C. assigned to the use of the president of the U.S.] (1811) 1: the executive department of the U.S. government 2: a residence of the president of the U.S. white hunter n (1954): a white man serving as guide and professional hunter to an African safari white knight n (1951): one that comes to the rescue (as of a failing business): savior. RESCUER also: one that champions a cause white lead n (15c): any of several white lead-containing pigments; esp: a heavy poisonous basic carbonate of lead of variable composition that is marketed as a powder or as a paste in linseed oil, has good hiding power, and is used chiefly in exterior paints white lightning n (1915): MOONSHINE 3

\a\abut \a\kitten, F table \ar\further \a\ash \a\ace \a\cot, cart \au\out \ch\chin \c\bet \c\easy \g\go \i\hit \l\ce \j\job \n\sing \o\go \o\law \oi\boy \th\thin \th\ \the \u\loot \u\y\foot \y\ yet \zh\vision \a', ce, ce, ue, ue, ue, \u\y\ see Guide to Pronunciation



iste thing molded, fr. LL

nplastrum, fr. Gk emplastron, sein to mold, plaster; akin to ef. 12c) 1: a medicated or las of cloth or plastic) spread ve ~), broadly: something mposition (as of lime, water, used for coating walls cail. used for coating walls, ceil-

adj
\( vi \) (14c) 1: to overlay or
plaster to 3 a: to cover
\( b: \) to apply as a coating or
a sticky or shiny substance
\( vi) to apply as a coating or
a sticky or shiny substance
\( vi) tightly to another surface
\( vi) tightly tightly to another surface
\( vi) tightly tightly tightly tightly
\( vi) tightly tightly tightly
\( vi) tightly tightly tightly
\( vi) tight

er, or felt usu, bonded to a

iel in plaster of paris 2: a laster of paris NTOXICATED if of plaster 2: a decisive

'aris. France] (15c): a white : CaSO<sub>4</sub>-1/<sub>2</sub>H<sub>2</sub>O or 2CaSO<sub>4</sub>-thiefly for casts and molds in

astering used to finish archi-

ing, fr. Gk plastikos, fr. plase. CREATIVE (~ forces in nanodeled (~ clay) b: capa: PLIABLE (ecologically ~ sisting of a plastic 5: calpermanently in any directional standard; eyp is the ~ age, the era of the

ALLEABLE, ADAPTABLE mean ALLEABLE. ADAPTABLE mean r nature. PLASTIC applies to apable of hardening into the nething easily bent, folded, so flexibility and sometimes he suggestion of submissive-what can be drawn out or of what may be pressed or o what may be pressed or e capability of being easily

pecif: any of numerous or-are mostly thermoplastic or ir weight and that can be ated into objects, films, or

str. ikos, fr. plassein] 1: develor relating to (something st. -plasty, or -plasy) (homo-

1: in a plastic manner 2

or bas-relief) characterized one of the visual arts (as juished from those that are

the quality or state of being altered 2: the ability to nation 3: the capacity of n developmental pattern, in rying environmental condi-

1919) 1: to make plastic tress cover) — plas-ti-ci-za-

that plasticizes; specif: a to impart flexibility, work-

tic surgery y concerned with the repair, ed, defective, or misshapen

led] (1885): any of various

plas-tid-i-al \pla-'stid-e-əl\

4sol] (1946): a substance sticizer that can be molded,

ication of heat

plastos + E cyan- + -in]

acts as an intermediary in

+ -gene] (1937): a heredi-

ion\ n [plasto- (fr. Gk plas-(1958): a plant substance le in photosynthetic phos-

g to a plastron

plastron \plastron \n [MF, fr. Olt piastrone, aug. of piastra thin metal plate — more at Plaster] (ca. 1506) 1 a: a metal breastplate formerly worn under the hauberk b: a quilted pad worn in fencing practice to protect the chest, waist, and the side on which the weapon is held 2: the ventral part of the shell of a tortoise or turtle consisting typically of nine symmetrically placed bones overlaid by horny plates 3 a: a trimming like a bib for a woman's dress b: DICKEY 1a 4: a film film of air held by water-repellent hairs of some aquatic insects plasty \plaste\n n comb form [F-plastie, fr. LGk-plastia molding, fr. Gk-plastes molder, fr. plassein]: plastic surgery (osteoplasty) plast \n plat \plast \n plat \text{vi platted}; platting [ME platen, alter. of platten] (14c)

interpolation (1935): PLAIT in the plane in the plane in (1945) in the plane in

platid jour \plaid-\n\n \ [ME. fr. L platanus] (140): \*PLANE |
plat of our \plaid-\n'2\n\u00e4n\u00e

chancally, chemically, or electrically, also: to deposit (as a lary) on a surface 2: to make a printing surface from or for 3: to fix or secure with a plate plateau pla-'tō, 'pla-\\', n, pl plateaus or pla-teaux \-'tōz, \, tōz\\ [F, fr. MF] platter, fr. plat flat] (1796) 1 a: a usu. extensive land area having a relatively level surface raised sharply above adjacent land on at least one side: TABLELAND b: a similar undersea feature 2 a: a region of little or no change in a graphic representation b: a relatively stable level, period, or condition plateau wi (1939): to reach a level, period, or condition of stability plateau wi (1939): to reach a level, period, or condition of stability plateau wi (1939): to reach a level, period, or condition of stability plateau wi (1939): to reach a level, period, or condition of stability plateau wi (1939): to reach a level, period, or condition of stability plateau (1935): a minute flattened body (as of ice or a minicral); esp: 10.00PLATELET (1904): a machine for making printing plates—and esp. offset printing plates—platemak-ing \-\text{kin}\n n [MF plateine, fr. plate] (1541): 1: a flat plate (as of metal); esp: one that exerts or receives pressure 2: the roller of a typewriter plate-r\n n (1777): 1: one that plates 2 a: a horse that runs chiefly in plate races b: an inferior racchorse plate rail n (1902): a rail or narrow shelf along the upper part of a wall for holding plates or ornaments.

chiefly in plate races b: an inferior racehorse plate rail n (1902): a rail or narrow shelf along the upper part of a wall for holding plates or ornaments plater-esque \plate-2-resk\ adj. often cap [Sp. plateresco, fr. platero silversmith, fr. plata silver] (ca. 1842): of, relating to, or being a 16th century Spanish architectural style characterized by elaborate ornamentation suggestive of silver plate plate form \plate form\ n. often attrib [MF plate-forme diagram, map. lit., flat form] (1574) 1: PLAN. DESIGN 2: a declaration of the principles on which a group of persons stands; esp: a declaration of principles on which a group of persons stands; esp: a declaration of principles and policies adopted by a political party or a candidate 3 a (1): a horizontal flat surface usu. higher than the adjoining area; also: a device incorporating or providing a platform (as for reaching high places) (2): a raised flooring (as for speakers or performers) b: a place or opportunity for public discussion 4 a: a usu. thick layer (as of cork) between the inner sole and outer sole of a shoe b: a shoe having such a sole platform rocker n (1944): a chair that rocks on a stable platform platform scale n (1834): a weighing machine with a flat platform on which objects are weighed — called also platform balance platform tennis n (1955): a variation of paddle tennis that is played on a platform enclosed by a wire fence platin- or platino- comb form [NL platinum]: platinum (platinotype) (platinidium) | platina adi (1940): of the color platinum

<sup>2</sup>platina adj (1940): of the color platinum
<sup>2</sup>plating ''plāt-in', n (1831) 1: the act or process of plating 2 a: a
coating of metal plates b: a thin coating of metal

plactin-ic \pla-'tin-ik\ adj (1842): of, relating to, or containing platinum esp, with a valence of four — compare PLATINOUS plati-inize \plati-inize \plat-inize \plat-inize

of platitudes plat-i-tu-di-nize \-'t(y)\u00e4d-\u00e4n-\u00e4\u00e4v -nized; -niz-ing [platitudinous] (1885)

of platitudes plati-tudi-mize \^-t(y)\tid-^2n-\tiz\ vi -nize\tideq; niz-ing [platitudinous] (1885): to utter platitudes plati-tudi-nous \^-t(y)\tid-^2n-\tiz\ vi -nize\tid; niz-ing [platitude + -inous (as in multitudinous)] (1862): having the characteristics of a platitude: full of platitudes \( \sigma \) remarks \> - plati-tu-di-nous\ y adv platinitude \( \tip\) platitude: \( \tip\) p

activity (a ~ of waiters); esp: a group of football players who are trained for either offense, or defense and are sent into or withdrawn from the game as a body 2platoon vi (1963): to play (one player) alternately with another player in the same position (as on a baseball team) ~ vi 1: to alternate with another player at the same position 2: to use alternate players at the same position platoon sergeant n (1915): a noncommissioned officer in the army ranking above a staff sergeant and below a first sergeant Platt-deutsch \plat-\doich. \plat-\n [G. fr. D Platduitsch. lit... Low German, fr. plat lat, low + duitsch German) (1834): a colloquial language of northern Germany. comprising several Low German dialects platter \plat-or\n [ME plater, fr. AF, fr. MF plat plate] (14c) 1 a: a large plate used esp. for serving meat b: PlATE 3c(2) 2: a phonograph record — platter-ful \plat-\n n — on a platter: without effort i.very easily (can have the presidency on a platter — Jonathan Daniels) platy \plat-\n n = 0 n a platter also: consisting of plates or flaky layers — used chiefly of soil or mineral formations 2 platy \plat-\n n = 0 platy or plat-ies [NI. Platypoeclus, former genus name of the fish] (1931): either of two live-bearers (Xiphophorus maculatus and X. variatus of the family Poecillidae) that are popular for tropical aquariums and are noted for variability and brilliant color — called also platy-\n ish-\n helmis helminth (10a. 1890): any of a phylum (Platyhelminthes) of soit-bodied usu. much flattened worms (as the planarians, flukes, and tapeworms) — platy-helminthic \helminthic \helmint

platy-pus 'plat-i-pas, -pus\ n, pl
platy-pus-es also platy-pl\ 'pl
platy-pus-es also platy-pl\ 'pl
-pe\ NL, fr. Gk platy-pous flatfooted, fr. platys broad, flat +
pous foot — more at PLACE, FOOT]
(1832): a small aquatic oviparous mammal (Ornithorhynchus anatinus) of southern and eastern
Australia and Tasmania that has a fleshy bill resembling that of a
duck, dense fur, webbed feet, and
a broad flattened tail
platyr-phine \(\text{Vplat-i-rin}\) adj

a broad flattened tail
platyr-rhine 'plat-i-,rin\ adj
(1857) 1 [NL Platyrrhina, fr. Gk
platyrrhin-, platyrrhis broadnosed, fr. platys + -rrhin-rrhine]
of, relating to, or being any of a
division (Platyrrhina) of monkeys all of which are New World mon-



\a) abut \a kitten, F table \ar\further \a\ash \a\a\ce \a\cot, cart \au\out \ch\chin \c\bet \e\e\cent{e}\easy \g\go \i\hit \i\i\ce \i\job /ŋ/ sing /o/ go /o/ law /oi/ boy /th/ thin /th/ the /ü/ loot /u/ foot /y/ yet /zh/ vision /å, k, a, ce, ce, ue, ue, ze, z/, see Guide to Pronunciation

# EXTERIOR PARTS FOR WATCH

Publication number: JP55141538
Publication date: 1980-11-05
Inventor: NISHIKAWA MITSUTAKA
Applicant: SEIKO EPSON CORP

Classification:

- international: C22C5/02; G04B37/22

- european:

Application number: JP19790049299 19790420

Priority number(s):

[Detailed description of the invention (extract)] Conventionally, white color of exterior parts for watch are obtained by using stainless steel, Pd metal plating, or Ru metal plaiting, or the like. Further, although a gold color of exterior parts for watch is obtained by using 24-karat gold or gold alloy, it is generally obtained by using gold metal plating on a copper alloy.

# **EXTERIOR PARTS FOR WATCH**

Patent number:

JP55141538

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1980-11-05

Inventor:

NISHIKAWA MITSUTAKA

Applicant:

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Classification:

- international:

C22C5/02; G04B37/22

- european:

**Application number:** 

JP19790049299 19790420

Priority number(s):

# Abstract of **JP55141538**

PURPOSE: To provide hardness, fine appearance and golden color having everlasting luster to the title parts by making the parts made of amorphous alloy of a specified composition consisting of Ge and the balance Au and inevitable impurities. CONSTITUTION: This amorphous alloy is obtd. by cooling a material of a composition consisting of 20-40 atomic% Ge and the balance Au and inevitable impurities as a cooling rate of about 10<3> deg.C/sec. This alloy can be worked into a several mm. thick plate or a wire rod applicable to exterior parts for a watch.

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# (9) 日本国特許庁 (JP)

①特許出願公開

# ⑩公開特許公報(A)

昭55—141538

Int. Cl.<sup>3</sup>
 C 22 C 5/02
 G 04 B 37/22

識別記号

庁内整理番号 7920-4K 7027-2F **公**公開 昭和55年(1980)11月5日

発明の数 1 審査請求 未請求

(全 3 頁)

# 69時計用外装部品

②特 顯 昭54-49299

②出 願 昭54(1979)4月20日

**加杂** 明 者 西川光貴

諏訪市大和3丁目3番5号株式

会社諏訪精工舎内

東京都中央区銀座4丁目3番4

号

個代 理 人 弁理士 最上務

朔 趣

発明の名称

時計用外簽點品

特許部水の食田

いずれも原子パーセントでは · 20~40 6 登 形 A B 及び不可避的不純物からなる非晶質合金で 体成された時計用外装物品。

発明の評価な経典

本発明に全色でしかも便質な時計用外級的品に 係わるものであり、参智すれば先沢が良好で携帯 時に部が付着にくい時計用外級商品に係わるもの

作業、瞬計形外装部品は、白色はステンレスのもしくはPd メッキ B s メッキ等が用いられている。また全色は 2 4 ま b るいは全合全を使用しているが一般的には 第合全に金メッキが用いられている。しかしいずれる上記の時計用外級部品は数く協が付きあい。呼に動合金に全メッキを難した

したがつて会色でしかも突しさが変わらぬ先沢 を有し携帯しても歯が付きにくく半水久的に変動 的な効果を失なわない時計用外投削品が陶強され ている。本発明は上述の欠点を改きしなくしかも 失しさが変わらぬ光沢を有した会色の時計用外裂 か品を提供するものである。

まず本発明の成分の設定無由を述べる。 0 《 II 原子 がで 2 0~ 4 0 多に限定したが 2 0 多以下もしく II 4 0 多以上では本発明の特徴である評品質合金になり難いためである。 また残分を 4 4 を限定したがさらに 4 8 の一部を C 2 、 1 3 、 P 4 。

-

-2-

一般に非品質は特は、冷却速度が10°~10□でン/
■■C という非常に急速な冷却が必要であるが、本 免別の采は10°で/■EC 容度の冷却速度で良く、数量 の概以もしくに設材が作扱可能であり時計用外数 部品として異用可能である。したがつて非自質化 した合金で、時計用外数部品の作数は充分に可能 でありまた本系の非品質合金で作数された時計用 外級商品に非常に硬くしかも研修面に美しい光沢 そ有し結晶金融では私がたい色沢も得られる。

以下英格が化したがつて本発明の神磁を説明する。

#### 哭瓶师

まず硬さは表2に示す如くであり現就就質金合

特階超55-141538(2)

会よりもはるかに使い。 当然携帯時にかける射傷 性は回上すると考えられる。 引強り強さも終えに 示すが非常に高い。 非晶質合金の影響が光分出て いると考えられる。

. 久に光永は非常に美しく高級感むふれる光沢を なしている。

新食がは数3 に示すが18 K 合金と任信等しく人工行に約1 ケ月改改しても変色せず金メッキ品よりはるかに良好である。

動物性は扱るに示す如く通常使用化おいては、 ほとんど外数を挟立う傷は付きにくいという結果 を待た。

設 1 . 本免明ケース材料の化学成分(aff)

政分	AL I	A6. 2	A 3	A. 4	A6 5	
v .	2U <b>≸</b>	25 %	30 %	35 ≸	40 %	
A to	表	2	费	74	表	

说2. 带 就 的 性 負

西田	本発明	本発明	本発明	本発明	本発明	M-Ca-Co 使質盘 合金	aus	
B	<i>6</i> 3	A62	<i>A</i> 63	Æ4	A65	6金	304	6/3 <b>5</b> (8)
便さ (Ew)	535	562	584	572		350	155	95
明金金	158	163	172	163	154	102	58	88

表3・計 食 性

其料	不免男 461	本党明	本発射 463	本発明	本発明 AG5	18車 合金	5/4 英第 +金/ 24	1
食性	30日間 発射せ プ	何左	同左		向左		5月 1日半で 発酵	304 7日間 で発酵

武教方法:人工杆化会改作。 主读 4 0 ℃ 発酵期間で比較 表4.前 售 性

PK PA	本発明 本 1		本発明 系 4		5/ 黄銅 +メッキ 5#	808 304
40000000000000000000000000000000000000	3/5 *	 	1/5 5	 		5/5 1

| 試験方法: 飲製期間は3ヶ月 携帯条件は通常携帯

本発別は、上配ケース(別、ガラス域、基プタ を付プタなど)の他、文字板、見切板、リューズ ボタン、針、パンド及びその胸連部品などの外級 砂品なら何にも適用できる。

> 出動人 株式会社銀肋指工会 代銀人 最 上 為

ᆂ

-5-

#### 特開昭55~141538(3)

# 手 続 補 正 沓 (自免)

特許庁以官 頒谷 普二 股

13...

1. 水作の技术。



2. 発明のお客

時前用外接係品

3. 朝圧をする打

事件との深係 東京都中央区銀路 4 丁目 5 年 4 号 山間人 (254) 株丈会社 畑 訪 精 エ 合 代表取締役 中 村 恒 也

4. 代 斑 人

東京都渋谷区神宮前2丁目6番8号(4664) 弁理士 最 上 務 248次 563-2111 內報 228-6 和門及8期



S. MESS SMITS CRIPCH

集技の当能 がん

別数の適り

4 6別要4を以下の如く訂正する。

表 4 耐 傷 性

K #	本の用	本初明 Æ 2	本提供 在 3	*309 # 4	47891 AL 5	An-Cu- Co 使質 金合金	√498¶+ ≠ 7 + 5 #	808 304	
まむは	0/20	0/55	0/50	0/6+	1/87	4/00	3/57	8/80	

試験方法: 試現間は3 ク月 ( 携帯条件は週常携帯

上 は



#### 争 紋 補 正

1. 3 質下から7 行目

「啓解し双ロール法により度みが」とあるを 「辞解し冷却と非晶質化及び複形状を双ロー ル法により行ない厚みが」と訂正する。

2 3貫下から3行目

「作权した。その駅時計用」とあるを 「作权した。又線回折を行えい、非品質であ ることを確認した後その原時計用」と訂正する。

, 5. 5資設2を以下の如く訂正する。

表 2 · 投枝的性質

B K	本形形 <b>本</b> 1	本批判 Æ 2	本発明 /6 i	本 <b>科</b> 斯 基 4	*ARA & 5	AL-OL-CO 研集全合会	808 304	<b>学 英國</b>
(HA)	880	569	574	583	5 3 2	\$50	155	9 5
引知武吉 ([4/4])	154	161	164	171	155	102	5.8	5.5

- 1 -

# COMPOSITE METALLIC SHEET AND ITS PRODUCTION

Publication number: JP6010010 Publication date: 1994-01-18

Inventor: TAKAHASHI SATORU; others: 02 Applicant: MITSUBISHI MATERIALS CORP

Classification:

- international: B22F7/04; A44C25/00

- european:

Application number: JP19920171344 19920629

Priority number(s):

[0002]

[Priory arts]

With respect to accessories or ornaments such as a watchband, a bracelet, a lighter, a broach, a pendant, a buckle, a fountain pen, a cigarette case, a tiepin and cuff buttons, and various handicrafts, ones with surface patterns consisted of two or more color tones are preferable from a decorative and esthetic standpoint.

[0013]

Materials of whitish color tone

Stainless steel (SUS304), 18-karat gold (75% by weight of Au - 20% by weight of Pd - 5% by weight of Ag), 14-karat gold (58.5% by weight of Au - 20% by weight of Pd - 20% by weight of Ag), silver solder, mild steel, nickel and nickel alloy, aluminum and aluminum alloy, titanium and titanium alloy, cupronickel, monel metal, German silver, silver and silver alloy, and platinum and platinum alloy.

# COMPOSITE METALLIC SHEET AND ITS PRODUCTION

Patent number:

JP6010010

Publicati n date:

1994-01-18

Inventor:

TAKAHASHI SATORU; others: 02

**Applicant:** 

MITSUBISHI MATERIALS CORP

Classification:

- international:

B22F7/04; A44C25/00

- european:

Application number:

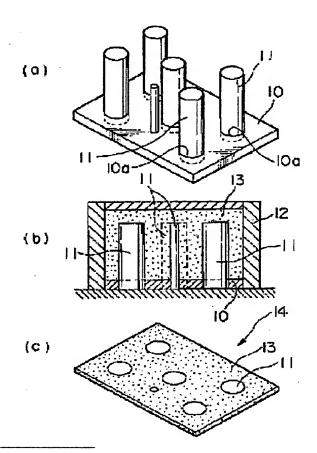
JP19920171344 19920629

Priority number(s):

# Abstract of JP6010010

PURPOSE:To eliminate the clearance between the metallic lump and filler which are perfectly joined and to easily form an intricate pattern by filling the filler around the metallic lump, sintering the materials and cutting the obtained metallic composite to a sheet.

CONSTITUTION:A wiry, granular or powdery filler 13 having a color tone different from that of a metallic lump 11 is filled around the lump, and then the materials are sintered to obtain a metallic composite. The composite is cut to a sheet in the direction orthogonal to the axis of the lump 11. Consequently, a composite metallic sheet 14 with various patterns formed on the surface by the plural kinds of color tones is easily obtained.



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# (19)日本国特許庁 (JP) (12) 公開特許公報 (A)

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技術表示箇所

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Α

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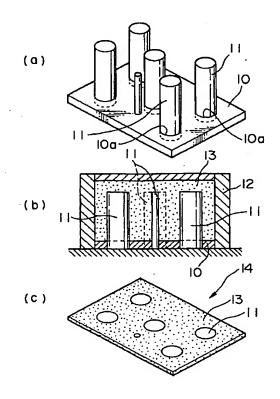
(74)代理人 弁理士 志賀 正武 (外2名)

## (54) 【発明の名称】 複合金属板とその製造方法

## (57)【要約】

【目的】 加工時間が大幅に短縮でき、模様と模様との 間に隙間ができることが防止でき、複雑な模様が形成で きる複合金属板とその製造方法を提供することを目的と する。

【構成】 金属塊の周りにこの金属塊11とは異なる色 調を有する線状、粒状又は粉状の充填物13を充填して 焼結して金属複合体を形成し、この金属複合体を板状に 切断する。



【特許請求の範囲】

【請求項1】 金属塊の周りにこの金属塊とは異なる色調を有する線状、粒状又は粉状の充填物を充填して焼結して金属複合体を形成し、この金属複合体を板状に切断して得られた複合金属板。

【請求項2】 金属塊の周りにこの金属塊とは異なる色調を有する線状、粒状又は粉状の充填物を充填して焼結して金属複合体を形成し、この金属複合体を板状に切断することを特徴とする複合金属板の製造方法。

#### 【発明の詳細な説明】

[0001]

【産業上の利用分野】本発明は、複数種の色調によって 表面に種々の模様が形成された複合金属板とその製造方 法に関する。

[0002]

【従来の技術】一般に、時計パンド、プレスレット。ライタ、プローチ、ペンダント、バックル、万年筆、シガレットケース、ネクタイピン、カフスボタンなどの装身具や装飾品、さらに各種工芸品などは、装飾的美的見地から、複数種の色調で構成された表面模様をもつことが 20 好まれる。

【0003】従来、このような表面模様をもつ装身具や装飾品や各種工芸品の製造には、次のように製造された複合金属板が用いられている。すなわち、図4に示すように、複数枚の金属板1の所定位置に所定の形状の孔1 aを切削等の機械加工によりあけた後、これらの金属板1を前記孔1aが互いに重なり合うように重ね合わせて積層体2を形成し、前記金属板1の色調と異なる色調を有し、かつ、前記孔1a内のり形状と同一の形状を有する金属棒3を前記孔1a内に挿入してから、前記金属板301と金属棒3とを拡散溶接により互いに一体に接合して金属複合体を形成し、この金属複合体を板状に切断して複合金属板を得るようにしている。

[0004]

【発明が解決しようとする課題】しかしながら、従来の複合金属板の製造方法では、金属板1に機械加工により形成された孔1 a内に金属棒3を挿入するようにしているので、金属板1及び金属棒3を所定の形状に加工するのに時間がかかるといった問題がある。さらに、機械加工の精度の関係から金属板1の孔1 aの内面と金属棒3の外面との間に隙間が形成されることがあり、この隙間のために拡散接合に不備が生じたり、製造した複合金属板の見栄えが悪くなるといった問題もある。しかも、機械加工により前記孔1 aを加工するようにしているので、複雑な形状例えば星形や花形に加工することは極めて困難であり、複合金属板に簡単な形状の模様しか形成できず、付加価値が低くならざるをえなかった。

【0005】本発明は、上記事情に鑑みてなされたもので、加工時間が大幅に短縮でき、模様と模様との間に隙間ができることが防止でき、複雑な模様が形成できる複 50

合金属板とその製造方法を提供することを目的とする。 【0006】

【課題を解決するための手段】本発明の複合金属板は、 金属塊の周りにこの金属塊とは異なる色調を有する線 状、粒状又は粉状の充填物を充填して焼結して金属複合 体を形成し、この金属複合体を板状に切断して得られ る。

[0007] 本発明の複合金属板の製造方法は、金属塊の周りにこの金属塊とは異なる色調を有する線状、粒状又は粉状の充填物を充填して焼結して金属複合体を形成し、この金属複合体を板状に切断することを特徴とする。

[0008]

【作用】本発明の複合金属板によれば、金属塊の周りに充填物を充填して焼結して得られるので、従来のように機械加工により孔を形成する必要がなく加工時間を大幅に短縮することができる。また、前記金属塊の周りに充填物が充填されるので、金属塊と充填物との間に隙間が生ずることができるとともに、できあがった複合金属板の見栄えを良くすることができる。さらに、金属塊の周りに充填物を充填するようにしているので、金属塊の周りに充填物を充填するようにしているので、金属塊が複雑な形状をしていても、金属塊の外形に対応して充填物を配置することができ、複合金属板の付加価値を高めることができる。

【0009】本発明の複合金属板の製造方法によれば、金属塊の周りに充填物を充填して焼結するようにしているので、従来のように機械加工により孔を形成する必要がなく加工時間を大幅に短縮することができる。また、前記金属塊の周りに充填物が充填されるので、金属塊と充填物との間に隙間が生ずることが防止でき、これらの接合を完全なものとすることができるとともに、できあがった複合金属板の見栄えを良くすることができる。さらに、金属塊の周りに充填物を充填するようにしているので、金属塊の間りに充填物を充填するようにしているので、金属塊が複雑な形状をしていても、金属塊の外形に対応して充填物を配置することができ、複合金属板に複雑な模様を形成させることができ、複合金属板の付加価値を高めることができる。

[0010]

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【実施例】以下に図面を参照して、本発明の実施例の複合金属板とその製造方法について説明する。

【0011】図1(a)に示すように、孔10aが形成された基板10の孔10a内に金属棒(金属塊)11の端部を挿入することにより、複数の金属棒11を前記基板10に立設する。前記基板10は構造用鋼等の適宜の材料を採用することができる。また、前記金属棒11の材料としては、以下の材料のうちから適宜のものを採用することができる。

【0012】赤色系色調の材料



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純銅、低合金銅、18K金合金(75重量%Au-25 重量%Cu)、丹銅

【0013】白色系色調の材料 (

ステンレス鋼(SUS3.04)。 18K金合金(75重量%Au-20重量%Pd-5重量%Ag)、14K金合金(58.5重量%Au-20重量%Pd-20重量%Ag)、銀ろう、軟鋼、ニッケル及びニッケル合金、アルミニウム及びアルミニウム合金、チタン及びチタン合金、キュプロニッケル、モネルメタル、洋白、銀及び銀合金、白金及び白金合金

【0014】 黄色系色調の材料

18K金合金(75重量%-20重量%Ag-5重量% Cu)、純金、黄銅、アルミニウム青銅

【0015】次に、前記金属棒11を前記基板10ごと型12内に収納する。そして、前記型12と前記金属棒11との間に、直径0.3mmの線材を長さ1~2mmに切断した充填物13を充填してHIP(熱間静水圧プレス)により押し固めて焼結して金属複合体を得る。なお、前記充填物13の材料としては、前記した金属棒11に使用することのできる材料から適宜選択することが20できる。この際、前記充填物13の材料の色調が、金属棒11の材料の色調の異なるようにすることにより、金属棒11と充填物13とにより模様が形成されるようにする。

【0016】次に、焼結された金属複合体をその中に埋設された金属棒11の軸線にほぼ直交する方向に板状に切断して、図1(c)のような複合金属板14を得る。この複合金属板14の板面には、色調の異なる金属材料から構成される水玉模様が形成されている。この金属複合体14を用いて水玉模様をもった装飾品や装身具や各30種工芸品を製造する。

【0017】本実施例の複合金属板14の製造方法によれば、金属棒11の周りに充填物13を充填して焼結するようにしているので、従来のように機械加工により孔を形成する必要がなく加工時間を大幅に短縮することができる。

【0018】また、前記製造方法によれば、金属棒11 の周りに充填物13が充填されるので、金属棒11と充填物13との間に隙間が生ずることが防止でき、これらの接合を完全なものとすることができるとともに、でき 40 あがった複合金属板14の見栄えを良くすることができる。

【0019】また、前記製造方法により得られた複合金 属板14の表面には、異なる色調によって複雑な模様が 形成され、装飾的美的見地から高い評価を得ることがで きる。

【0020】なお、前記実施例では、断面円形の金属棒 11を用いたが、図2に示すように、断面が星形の金属 棒21や断面がハート形の金属棒31や断面が花形の金 属棒であってもよい。このものでは、金属棒21,3 1,41の周りに充填物を充填するので、金属棒21,31,41が複雑な形状をしていても、金属棒21,31,41の外形に対応して充填物13を配置することができ、複合金属板14に複雑な模様を形成させることができ、複合金属板14の付加価値を高めることができる。

【0021】また、前記実施例では、金属棒11の周りに充填物13を充填するようにしているが、図3(a)のように、球形あるいは異形の金属塊51と前記したのと同様な充填物13とを混合して型内に充填して焼結して金属複合体50を得るようにしてもよい。この金属複合体50を板状に切断することにより、図3(b)に示すように、複雑な離れ島状の模様が形成された複合金属板54を得ることができる。なお金属塊としては、線材を所定の長さに切断したものであっても、金属粉末とバインダとを混合した可塑性組成物を所定の形状に成形した後焼結したものであってもよい。

【0022】前記実施例では、線材を短く切断した充填物13を用いたが、例えば溶融金属を水中に滴下して得られたいわゆる水中ショットのような粒状体や、例えば、アトマイズ法によって製造された粉状体を用いることできる。また、充填物として18Kや14Kの要素粉を用いてもよい。

[0023]

【発明の効果】以上説明したように、本発明の複合金属 板によれば、金属塊の周りにこの金属塊とは異なる色調 を有する線状、粒状又は粉状の充填物を充填して焼結し て金属複合体を形成し、この金属複合体を板状に切断し て得られるので、金属塊の周りに充填物を充填して焼結 して得られるので、従来のように機械加工により孔を形 成する必要がなく加工時間を大幅に短縮することがで き、前記金属塊の周りに充填物が充填されるので、金属 塊と充填物との間に隙間が生ずることが防止でき、これ らの接合を完全なものとすることができるとともに、で きあがった複合金属板の見栄えを良くすることができ、 金属塊の周りに充填物を充填するようにしているので、 金属塊が複雑な形状をしていても、金属塊の外形に対応 して充填物を配置することができ、複合金属板に複雑な 模様を形成させることができ、複合金属板の付加価値を 髙めることができる。

【0024】本発明の複合金属板の製造方法によれば、金属塊の周りにこの金属塊とは異なる色調を有する線状、粒状又は粉状の充填物を充填して焼結して金属複合体を形成し、この金属複合体を板状に切断するようにしたので、金属塊の周りに充填物を充填して焼結するようにしているので、従来のように機械加工により孔を形成する必要がなく加工時間を大幅に短縮することができ、前記金属塊の周りに充填物が充填されるので、金属塊と充填物との間に隙間が生ずることが防止でき、これらの接合を完全なものとすることができるとともに、できあ

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がった複合金属板の見栄えを良くすることができ、金属 塊の周りに充填物を充填するようにしているので、金属 塊が複雑な形状をしていても、金属塊の外形に対応して 充填物を配置することができ、複合金属板に複雑な模様 を形成させることができ、複合金属板の付加価値を高め ることができる。

# 【図面の簡単な説明】

【図1】本発明の一実施例の複合金属板の製造方法を示す工程を示す図である。

【図2】図1の製造方法に使用される金属塊の他の例を 10 示す斜視図である。

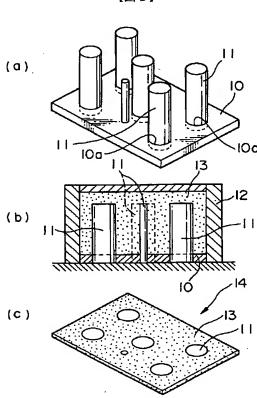
【図3】本発明の他の実施例の複合金属板の製造方法を示す図である。

【図4】従来の複合金属板の製造方法を示す斜視図である。

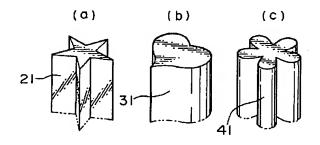
# 【符号の説明】

- 11 金属棒
- 13 充填物
- 14 複合金属板
- 21, 31, 41 金属棒
- 5 1 金属塊
- 5 4 複合金属板

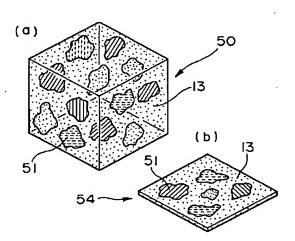
【図1】



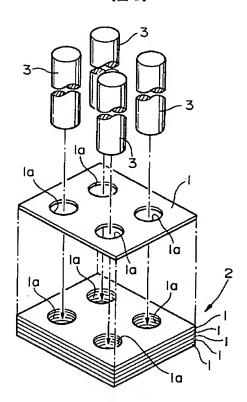
[図2]



[図3]







# EXTERIOR PARTS FOR WATCH

Publication number: JP57097484 Publication date: 1982-06-17

· Inventor: MORITA YOSHIO

Applicant: SEIKO EPSON CORP

Classification:

- international: G04B45/00

- european:

Application number: JP19800173404 19801209

Priority number(s):

[Detailed description of the invention (extract)]

The present invention relates to exterior parts for watch, wherein the material for the parts is obtained by joining alternately gold alloy and stainless steel.

Conventionally, product, wherein a gold is embedded in the part of the stainless steel exterior parts for watch, has widely been used.

The concrete method is embedding and fixing gold material by brazing or the like in a concavity formed on the part of the stainless steel exterior parts for watch.

But it has been difficult to produce the parts wherein white color and gold color are alternately and finely joining, and an appearance of the parts has not been sharp because there has generally been the brazer at the point where the white color and the gold color are finely joining.

The present invention has been made to solve the problem.

The present invention relates to the exterior parts for watch wherein the material for the parts, which is obtained by joining alternately gold alloy and stainless steel, is wholly or partly used.

With respect to the present invention, the term of "gold alloy" used herein means 24-karat gold, 18-karat gold, 14-karat gold, 10-karat gold, or the like. The term of "stainless steel" used herein means SUS304, SUS316, SUS316L, or the like.

A stainless steel is the most practical as the material, because it is low in cost among materials that can show white color and is equal to practical use as an exterior parts for watch. So the material is limited to a stainless steel.

# (19) 日本国特許庁 (JP)

①特許出願公開

# ⑩公開特許公報(A)

昭57—97484

⑤Int. Cl.³G 04 B 45/00

識別記号

庁内整理番号 7027-2F ❸公開 昭和57年(1982)6月17日

発明の数 1 審査請求 未請求

(全 2 頁)

# **匈時計用外装部品**

创特

御出

願 昭55--173404

願 昭55(1980)12月9日

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号

⑩代 理 人 弁理士 最上務

#### 明 翻 書

# 1. 発明の名称 時計用外穀部品

# 2. 特許請求の顧問

金合金とステンレス鋼とを交互に接合して構成 した材料を全体あるいは、一部に配設することに より構成した時計用外装部品。

# 3. 発明の詳細な説明

本発明は、金合金とステンレス鋼とを交互に接合した原料を用いたことを特徴とする時計用外装部品に関するものである。

従来、ステンレス領製の時計用外表部品におい エステンレス領の一部に部分的に金を埋め込んだ。 製品が広く用いられている。《この具体的方法としては、ステンレス領製の時計用外表部品の一部に 凹部を形成しそとに金材をロー付等の方法で複数 固定していた。

しかしながら、との方法においては、金と白と

を交互に細く組み合わせた部品をつくることが、 困難であり、かつその白と金との細い接合部分に ロー材が介在するためスンキリとした外観にあが ちないのが通常であつた。

本発明は、この問題を解決するもので、金合金とステンレス側とを交互に接合して構成した材料を全体あるいは、一部に配設することにより、構成した時計用外装部品に関するものである。本発明で金合金とは、24K,18K,14K;10 K材等あり、ステンレス鋼とは、504材,

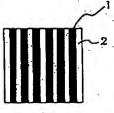
316,316L材等である。ステンレス質に限り 足したのは、白色を出せる材料として低コストで、 時間用外装盤品として死分実用に耐えられる材料。 としては、一番実用的であるためである。

金合金とステンレス側を交互に配設する仕方としては、第1回に示す様に相互に直線的に配設する方法。第2回の如く錦楼様に配設する方法、第3回の如く、第2回の模様を偏平にする方法、第4回の如く、格子模様にする方法等がある。各回において1は金合金の部分、2はステンレス剣の

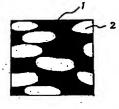
# 部分である。

上記の実材を用いた時計用外袋部品の餌を、 5~第7図に示す。第5図は、屛のコーナー型に 第1回のストライプ状の参析を配設した例を示す。 第1因の素材のかわりに、第2~第4.因のペイカ ター素材を記数しても同様な効果を得られる。 第 6回には、第1回の集材を金司に用いた例を示し た。第7図は、最に用いた例をした。第8図は第 1 図と第2図の双方を用いた例を示した。以上の 例の他に、尾錠。パンド等に用いることも、当然 可能である。

# 4 図面の無珠な説明



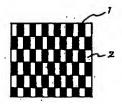




第1图

第2回





第 3 図

勒4团

